

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior listing of claims in this application.

Claims 1-12 (Canceled).

13. (Currently Amended) A method of fabricating a semiconductor device, the method comprising:

depositing a dielectric film over an active region of a semiconductor substrate to form part of a gate of a transistor; and

subjecting the dielectric film to a wet oxidation with steam process to raise the oxygen content of said dielectric film provided by heating a mixture of hydrogen and oxygen gases in a rapid thermal process chamber at a temperature greater than about 450 °C, wherein said mixture is a ratio from approximately 0.1 to approximately 0.80 of hydrogen gas to oxygen gas, and wherein the ~~pressure of said rapid thermal process chamber is less than atmospheric pressure~~ ratio of said mixture relative to other gases in said chamber is in the range from about 0.1 to about 0.5.

14. (Previously amended) The method of claim 13 wherein the wet oxidation process is performed at a temperature in the range of about 750 °C to about 950 °C and for a duration of about 20 seconds to about 60 seconds.

15. (Canceled)

16. (Original) The method of claim 13 wherein depositing a dielectric film includes depositing a material having a dielectric constant of at least about 25.

17. (Original) The method of claim 13 wherein depositing a dielectric film includes depositing a material selected from the group consisting of tantalum oxide and silicon nitride.

18. (Withdrawn) A method of fabricating a semiconductor device, the method comprising:

depositing a dielectric film over an active region of a semiconductor substrate to form part of a gate of a transistor; and

providing steam to a vicinity of the dielectric film while the substrate is in a rapid thermal process chamber at a temperature greater than about 450 °C.

19. (Withdrawn) The method of claim 18 wherein providing steam includes heating a mixture of hydrogen and oxygen gases, and wherein the ratio of steam to other gases in the chamber is in the range of about 0.1 to about 0.5.

20. (Withdrawn) The method of claim 18 wherein providing steam includes heating a mixture of hydrogen and oxygen gases wherein the ratio of hydrogen gas to oxygen gas in the mixture is in the range of about 0.1 to about 0.8.

21. (Withdrawn) The method of claim 18 wherein the steam is provided to the rapid thermal process chamber using a bubbled water vapor system.

22. (Withdrawn) The method of claim 18 wherein the stem is provided to the rapid thermal process chamber using a pyrogenic system.

23. (Withdrawn) The method of claim 18 wherein the steam is provided to the rapid thermal process chamber using a catalytic system.

24. (Withdrawn) The method of claim 18 wherein providing steam to a vicinity of the dielectric film includes generating steam in the chamber in situ.

25. (Withdrawn) The method of claim 18 further including:

subjecting the dielectric film to a heat treatment in an ambient comprising a stabilizing gas selected from the group consisting of N₂, O₂, O₃, NO, and N₂O.

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Cont.

Claims 26-40 (Canceled).

41. (Currently Amended) A method of fabricating a semiconductor device, the method comprising:

depositing a dielectric film with a thickness greater than about 40 Angstroms over a semiconductor substrate; and

subjecting the dielectric film to a wet oxidation with steam process to raise the oxygen content of said dielectric film in a rapid thermal process chamber at a temperature greater than about 450 °C, said steam provided in a ratio of at least 0.005 relative to other gases present in the rapid thermal process chamber, wherein the pressure of said rapid thermal process chamber is ~~less than atmospheric pressure~~ about 1 millitorr.

42. (Currently Amended) A method of fabricating a semiconductor device, the method comprising:

depositing a dielectric film over a semiconductor substrate to form one of a gate and a capacitor dielectric; and

subjecting the dielectric film to a wet oxidation with steam process to raise the oxygen content of said dielectric film provided by heating a mixture of hydrogen and oxygen gases in a rapid thermal process chamber at a temperature greater than about 450 °C, wherein said mixture is a ratio from approximately 0.1 to approximately 0.80 of hydrogen gas to oxygen gas, and wherein the pressure of said rapid thermal process chamber is ~~less than~~ about atmospheric pressure.

43. (Currently Amended) A method of fabricating a semiconductor device, the method comprising:

depositing a non-crystalline dielectric film over an active region of a semiconductor substrate to form part of a gate of a transistor; and

subjecting the non-crystalline dielectric film to a wet oxidation with steam

G' process to raise the oxygen content of said non-crystalline dielectric film provided by heating a mixture of hydrogen and oxygen gases in a rapid thermal process chamber at a temperature ~~greater than~~ from about 450 °C to about 750 °C, said mixture is a ratio from approximately 0.1 to approximately 0.80 of hydrogen gas to oxygen gas, wherein said steam is provided in a ratio of at least 0.005 relative to other gases present in the rapid thermal process chamber, ~~and wherein the pressure of said rapid thermal process chamber is less than atmospheric pressure.~~
